Appl. No. 10/006,984
Amdt. dated August 12, 2005
Amendment under 37 CFR 1.116 Expedited Procedure
Examining Group 2655

PATENT

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1.   (Currently Amended)   A method for detecting speech activity for a signal, the method comprising the steps of:

extracting a plurality of features from a digitized signal, wherein:

the plurality of features alone cannot recreate the digitized signal, and

the digitized signal is a digital representation of the signal;

modeling a first and a second probability density functions (PDFs) of the plurality of features, wherein:

the first PDF models active speech features for the digitized signal, ~~and~~

the second PDF models inactive speech features for the digitized signal,

and

at least one of the first or second PDFs uses a non-Gaussian model;

adapting the first and second PDFs to respond to changes in the digitized signal over time;

probability-based classifying of the digitized signal based, at least in part, on the plurality of features; and

distinguishing speech in the digitized signal based, at least in part, upon the probability-based classifying step.

2.   (Original)   The method for detecting speech activity for the signal as recited in claim 1, wherein the probability-based classifying step uses the first and second PDFs.

3.   (Previously Presented)   The method for detecting speech activity for the signal as recited in claim 1, wherein the modeling step comprises a step of determining a mathematical model for the digitized signal from the plurality of features.

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4. (Original) The method for detecting speech activity for the signal as recited in claim 1, wherein the adapting step comprises a step of increasing a likelihood.

5. (Previously Presented) The method for detecting speech activity for the signal as recited in claim 1, wherein the adapting step comprises a step of identifying extreme values in a plurality of previous frames.

6. (Original) The method for detecting speech activity for the signal as recited in claim 1, wherein the probability-based classifying step comprises a step of classifying based on likelihood ratio detection.

7. (Original) The method for detecting speech activity for the signal as recited in claim 1, wherein the probability-based classifying step comprises applying a log-likelihood ratio test to one of the plurality of features.

8. (Previously Presented) The method for detecting speech activity for the signal as recited in claim 1, wherein at least one of the first or second PDFs comprises a Gaussian mixture model.

9. (Canceled).

10. (Previously Presented) The method for detecting speech activity for the signal as recited in claim 1, wherein at least one of the first or second PDFs comprises a plurality of basic density models.

11. (Previously Presented) The method for detecting speech activity for the signal as recited in claim 1, wherein at least one of the plurality of features is related to power in a spectral band of the digitized signal.

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12. (Original)   The method for detecting speech activity for the signal as recited in claim 1, further comprising a step of smoothing an activity decision for hangover periods to produce a smoothed activity decision.

13. (Original)   A computer-readable medium having computer-executable instructions for performing the computer-implementable method for detecting speech activity for the signal of claim 1.

14. (Currently Amended)   A method for detecting sound activity for a signal, the method comprising the steps of:

extracting a plurality of features from a digitized signal, wherein:

the plurality of features do not fully represent the digitized signal, and

the digitized signal is a digital representation of the signal;

modeling an active sound probability density function (PDF) of the plurality of features;

modeling an inactive sound PDF of the plurality of features;

adapting the active and inactive sound PDFs to respond to changes in the digitized signal over time;

probability-based classifying of the digitized signal based, at least in part, on the plurality of features; and

distinguishing sound in the digitized signal based, at least in part, upon the probability-based classifying step,

wherein at least one of the active or inactive sound PDFs uses a non-Gaussian model.

15. (Original)   The method for detecting sound activity for the signal as recited in claim 14, wherein the probability-based classifying step uses the active and inactive speech PDFs.

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16.   (Original)   The method for detecting sound activity for the signal as recited in claim 14, wherein the adapting step comprises a step of increasing a likelihood.

17.   (Canceled)

18.   (Original)   A computer-readable medium having computer-executable instructions for performing the computer-implementable method for detecting sound activity for the signal of claim 14.

19.   (Previously Presented)   A method for detecting speech activity for a signal, the method comprising the steps of:

extracting a plurality of features from a digitized signal, wherein:

the plurality of features do not map one to one with the digitized signal, and

the digitized signal is a digital representation of the signal;

modeling an active speech probability density function (PDF) of the plurality of features;

modeling an inactive speech PDF of the plurality of features, wherein at least one of the active or inactive speech PDFs uses a non-Gaussian model;

adapting the active and inactive speech PDFs to respond to changes in the digitized signal over time;

probability-based classifying of the digitized signal based, at least in part, the active and inactive speech PDFs; and

distinguishing speech in the digitized signal based, at least in part, upon the probability-based classifying step.

20.   (Previously Presented)   The method for detecting speech activity for the signal as recited in claim 19, wherein both the active and inactive speech PDFs use a non-Gaussian model.

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21.   (Previously Presented)   A computer-readable medium having computer-executable instructions for performing the computer-implementable method for detecting speech activity for the signal of claim 19.